CALPINE

METCALF ENERGY CENTER
1 BLANCHARD ROAD
P.O. BOX 13190
SAN JOSE, CA 95013
408.361.4900
408.361.4949 (FAX)

November 17, 2004

Steve Munro
Compliance Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

Dear Mr. Munro:

Metcalf Energy Center, LLC, (MEC, LLC) is requesting approval of Amendment #1 to the Conditions of Certification for the Metcalf Energy Center. Based on experience gained during the commissioning and operation of Calpine's other, similar gas turbine power plants – including the Delta Energy Center (DEC) and Los Medanos Energy Center (LMEC) in Pittsburg – MEC, LLC has identified several necessary permit changes related to turbine/heat recovery steam generator (HRSG) commissioning, cold steam turbine startup and gas turbine tuning, as well as other minor administrative amendments that are needed to make the MEC Authority to Construct consistent with the permits for DEC and LMEC.

MEC, LLC has determined based on operating experience at other, similar gas turbine power plants that replacement of components of gas turbine combustor assemblies will be required periodically as these components reach the end of their operational lives. After the new gas turbine combustor components are installed, the gas turbine's fuel system must be tuned to meet manufacturer's specifications for emissions and combustion dynamics. As part of the tuning process, the gas turbine must operate intermittently at low loads for up to six hours. During this time, emissions will exceed permitted hourly limits. Gas turbine combustor tuning is expected to take place only a few times per year. With this application, MEC is requesting the addition of conditions that will allow elevated emissions during combustor replacement and subsequent combustor tuning activities.

In addition, MEC, LLC is requesting changes to the conditions that limit the length of the startup period and the NOx, CO and POC emissions during cold turbine startup sequences. Calpine's experience with cold turbine startups (that is, startups when the steam turbine has been out of operation for 72 hours or more) indicates that it can take up to six hours to come into compliance with the permitted NOx, CO and POC emission rates, rather than the 180 minutes currently allowed by the license for all startups. Short-term NOx and CO emissions are also somewhat higher than expected during this period. As true cold startups and combustor tuning activities are expected to occur very infrequently, the proposed changes will not affect maximum daily or annual facility emissions.

MEC, LLC expects to undertake cold steam turbine startups only a few times per year, and is not requesting any change to the condition that limits startup activities to only one turbine at a time. Once one gas turbine has undergone cold steam turbine startup and the steam turbine is heated, the second turbine can be started in a much shorter period of time. Similarly, combustor tuning activities are expected to occur very infrequently. The application proposes a limit of 30 hours per year for each gas turbine on the total hours of cold startup and turbine combustor tuning activities.

In this amendment, MEC, LLC is also requesting changes in some of the conditions in effect during the commissioning phase of the project. When the commissioning conditions were proposed, the applicant did not have experience commissioning these types of facilities and is basing this request on new information that was not available at the time the project was licensed. The applicant has reviewed CO emissions data collected during commissioning for other, similar facilities and has determined that the current hourly and daily limits may not be adequate. We are also proposing to reduce from 300 to 50 the number of commissioning hours each turbine/HRSG can operate without the SCR and oxidation catalyst systems installed. This in turn allows us to reduce our allowable NOx emissions during the first year of the project from 185 tons to 150 tons. No other changes are being proposed to the current daily or annual emission limits during commissioning.

Further, MEC, LLC is requesting the elimination of hourly NOx, CO and POC limits during routine turbine startups as well as changes to the current limits during shutdowns. The existing limits on total emissions during each three-hour startup sequence will remain unchanged, so overall startup emissions will not be affected. This proposed change reflects the experience at other, similar facilities, which indicates that emissions during the first hour of the startup period are higher than originally anticipated, although overall startup emissions are consistent with those originally licensed for MEC.

MEC, LLC is also requesting the modification of some testing and reporting schedules to make these schedules consistent with other conditions and with the time required to prepare accurate and complete reports. Additional changes are editorial in nature.

MEC, LLC has submitted an application to the Bay Area Air Quality Management District for a parallel approval of revisions to conditions in the District Authority to Construct.

Background and Schedule

MEC, LLC expects to initiate commissioning activities at the MEC in early summer 2005. MEC, LLC requests approval of the proposed changes to the conditions of certification as soon as possible so that the project can initiate operations in full compliance with all applicable conditions.

Environmental Impacts

The proposed changes in conditions related to NOx, CO and POC emissions during gas turbine combustor tuning, cold steam turbine startups, routine turbine startup and shutdowns and commissioning activities will allow infrequent, short-term increases in NOx, CO and POC emissions from the facility. The proposed changes will increase the maximum allowable hourly and daily CO emissions and reduce annual NOx emissions from the turbines during commissioning; no other daily or annual emission limits will be affected by the proposed modification.

The proposed changes in conditions related to NOx and CO emissions are not expected to have significant environmental impacts in any area. Potential impacts are shown in the following table:

Environmental Area	Potential Impact
Air Quality	Insignificant (see Attachment A)
Biological Resources	None
Cultural Resources	None
Efficiency	None
Geological Resources	None
Hazardous Material Handling	None
Land Use	None
Noise	None
Paleontological Resources	None
Public Health	None
Soil Resources	None
Traffic and Transportation	None
Visual Resources	None
Waste Management	None
Water Resources	None
Worker Safety	None

MEC, LLC is submitting the attached application for amendment for your review and approval. This modification will allow the project to comply with all laws, ordinances, regulations, and standards.

If you have any questions, please do not hesitate to call me at (408) 592-7915 or Nancy Matthews of Sierra Research at (916) 444-6666.

Sincerely,

Dana Petrin
Compliance Manager
Calpine South Bay Projects

attachment

cc: Steve Hill, BAAQMD Permit Services
Bob McCaffrey, Calpine
Barbara McBride, Calpine
Nancy Matthews, Sierra Research
Jeff Harris, Ellison, Schneider & Harris
Mark Smolley

Table of Contents

TABLE OF CONTENTS I

1.0 INTRODUCTION 1

1.1 OVERVIEW OF AMENDMENT 1
1.2 OVERVIEW OF PROJECT CHANGES 1
1.3 NECESSITY OF PROPOSED CHANGES 2
1.4 SUMMARY OF ENVIRONMENTAL IMPACTS 2
1.5 CONSISTENCY OF CHANGES WITH LICENSE 3
1.6 HISTORY OF MEC AMENDMENTS 3

2.0 DESCRIPTION OF PROJECT CHANGES 4

2.1 INTRODUCTION 4
2.2 PROPOSED PROJECT CHANGES 4
2.2.1 Elimination of Hourly Limits on NOx, CO and POC Emissions During Startup; Modification of Shutdown Limits 4
2.2.2 Addition of Conditions to Allow Elevated NOx, CO and POC Emissions During Gas Turbine Combustor Tuning and Cold Steam Turbine Startup Sequences 4
2.2.3 Changes in Conditions Related to Initial Turbine/HRSG Commissioning 5
2.2.4 Modification of Procedure for Determining Ammonia Slip Rates 5
2.2.5 Modification of Testing and Reporting Deadlines 6

3.0 ENVIRONMENTAL ANALYSIS OF THE PROJECT CHANGES 7

3.1 AIR QUALITY 8
3.2 CUMULATIVE IMPACTS 8
3.3 LORS 8

4.0 PROPOSED MODIFICATION TO THE CONDITIONS OF CERTIFICATION 9

5.0 POTENTIAL EFFECTS ON THE PUBLIC 10

6.0 LIST OF PROPERTY OWNERS 11

7.0 POTENTIAL EFFECTS ON PROPERTY OWNERS 12

1.0 Introduction

1.1 Overview of Amendment

Metcalf Energy Center (MEC) is a nominal 600 MW combined cycle power plant located in southern San Jose, Calif., approximately one-half mile west of the Pacific Gas and Electric Company Metcalf substation. The project was certified on September 24, 2001. Construction began in 2002. Commercial operation is expected to begin in the summer of 2005.

MEC is now proposing revisions to the project. The changes are necessary to enhance the project's reliability and performance. These changes are beneficial to the project and the community by taking advantage of knowledge obtained from the commissioning and startup of other, similar facilities.

This petition to amend the project contains the information required pursuant to Section 1769 (Post Certification Amendments and Changes) of the CEC Siting Regulations. The revisions are summarized below.

1.2 Overview of Project Changes

Proposed revisions addressed in this amendment include:

- Eliminate the current hourly limits on NOx, CO and POC emissions during startup, while retaining the overall emissions limits for the three-hour startup periods;
- Revise the current limits that apply during shutdowns;
- Add new definitions for cold startup and combustor tuning periods, with durations of six hours per period;
- Limit the allowable number of hours of steam turbine cold startup and gas turbine combustor tuning to 30 hours per calendar year for each gas turbine in each mode;
- Add a new NOx mass emission limit of 480 lb/period that will apply during steam turbine cold startup and gas turbine combustor tuning periods;
- Add a new CO mass emission limit of 5,028 lb/period that will apply during a steam turbine cold startup and gas turbine combustor tuning periods;
- Add a new POC mass emission limit of 96 lb/period that will apply during cold startup and combustor tuning periods;
- Add new recordkeeping requirements that will apply during cold startup and combustor tuning;
- Change the current CO limits during commissioning from 930 lb/hr to 5,000 lb/hr and from 11,498 lb/day to 20,000 lb/day;
- Reduce the number of firing hours for the commissioning period during which the Gas Turbines/HRSGs can be operated without SCR or oxidation catalyst controls from 300 hours per GT/HRSG to 50 hours per GT/HRSG.
- Reduce the allowable total NOx emissions during the first year of project operation from 185 to 150 tons;

- Modify the procedure for developing the relationship between monitored ammonia injection rates and calculated ammonia slip rates; and
- Modify some of the testing and reporting deadlines for consistency and improved compliance ability.

Section 2.0 of this amendment includes more information on the project changes.

1.3 Necessity of Proposed Changes

Sections 1769 (a) (1) (A), (B), and (C) of the CEC Siting Regulations require a discussion of the necessity for the proposed revisions to the MEC project and whether the revisions are based on information known by the petitioner during the certification proceeding. The necessity for each revision is addressed in Section 2. During the certification proceeding, MEC was not aware that NOx emission levels would be elevated for an extended period of time during true cold steam turbine startups. In addition, although MEC did know that gas turbine combustor replacement would be required periodically, the Applicant was not aware that the combustor tuning process that follows combustor component replacement would require long hold times at low loads that would result in NOx and CO emission rates that were higher than those allowed for by the conditions of certification. This information has only become available as the result of operating data from other, similar power plants.

During the certification proceeding, MEC also did not have the benefit of the experience of other large gas turbine facilities in commissioning their combustion equipment. Based on this experience, the Applicant has determined that higher CO emission limitations will be needed during the commissioning period than those originally requested. The Applicant now believes, however, that the SCR and oxidation catalyst systems can be installed earlier than originally proposed, so that uncontrolled operating hours during the commissioning period can be reduced from 300 to 50 without damage to the SCR system.

The Applicant's request for other, minor changes in testing and reporting deadlines, in allowable NOx, CO and POC emission rates during startup and shutdown, and in the process for developing a procedure for determining ammonia slip are also based on information now available from other operating gas turbine power plants that was not available during the licensing procedure.

1.4 Summary of Environmental Impacts

Section 1769 (a) (1) (E) of the CEC Siting Regulations requires that an analysis be conducted to address the impacts proposed revisions may have on the environment and proposed measures to mitigate significant adverse impacts. Section 1769 (a) (1) (F) requires a discussion of the impact of proposed revisions on the facility's ability to comply with applicable laws, ordinances, regulations, and standards (LORS). Section 3.0 discusses the potential impacts of the proposed changes on the environment, as well as the proposed revisions' consistency with LORS.

1.5 Consistency of Changes with License

Section 1769 (a) (1) (D) of the CEC Siting Regulations requires a discussion of the consistency of each proposed project revision with the assumptions, rationale, findings, or other bases of the final decision and whether the revision is based on new information that changes or undermines the bases of the final decision. Also required is an explanation of why the changes should be permitted. None of the proposed revisions undermines the assumptions, rationale, findings or other basis of the Commission Decision for the project. The revisions consist of beneficial changes to the project that increase reliability and reduce environmental impacts.

1.6 History of MEC Amendments

This is the first formal amendment request submitted for the MEC. With the exception of the recently-approved change in project ownership, previous changes have been insignificant changes related to project construction that have been made by petition, rather than formal project amendments.

2.0 Description of Project Changes

2.1 Introduction

Consistent with the California Energy Commission Siting Regulations Section 1769(a) (1) (A), this section includes a complete description of each of the proposed project modifications as well as the necessity for the changes.

2.2 Proposed Project Changes

2.2.1 Elimination of Hourly Limits on NOx, CO and POC Emissions During Startup; Modification of Shutdown Limits

Metcalf Energy Center's Authority to Construct allows the turbines to exceed their standard hourly emissions limitations during routine startups and shutdowns. The conditions in the Authority to Construct limit the maximum duration of each startup period to 180 minutes and limit the hourly and total pounds of NOx, CO, and POC that may be emitted during each startup. Based on several years of operating experience at Calpine's Sutter, DEC and LMEC power plants that utilize similar gas turbine, HRSG and steam turbine technology, MEC anticipates that the current hourly emissions limitations during startup will be overly restrictive in some cases, although the limit on total emissions per three-hour start is expected to be achievable. Similarly, MEC believes that the current limitations on shutdown emissions are too stringent and need to be changed.

2.2.2 Addition of Conditions to Allow Elevated NOx, CO and POC Emissions During Gas Turbine Combustor Tuning and Cold Steam Turbine Startup Sequences

MEC, LLC has determined based on operating experience at other, similar plants that replacement of components of gas turbine combustor assemblies will be required periodically as these components reach the end of their operational lives. After the new gas turbine combustor components are installed, the gas turbine's fuel system must be tuned to meet manufacturer's specifications for emissions and combustion dynamics. As part of the tuning process, the gas turbine must operate intermittently at low loads for up to six hours. During this time, NOx emissions will exceed permitted hourly limits. Based on experience with combustor tuning on gas turbines at other, similar facilities, MEC, LLC anticipates that gas turbine combustor replacement and subsequent tuning will be required on the MEC turbines on a periodic basis. Multiple fuel systems supply fuel gas to each gas turbine combustor, and the total gas flow is divided among the fuel systems to minimize NOx and CO production while also minimizing combustor dynamics and ensuring combustor stability. After gas turbine combustor replacement, a combustor must be tuned across its load range to achieve the optimal apportionment of fuel gas at each load point. This will

require the gas turbine to be operated at low loads for extended periods while the tuning takes place.

The conditions of certification also allow the two Gas Turbines to exceed their standard hourly emissions limitations during routine startups and shutdowns, but limit the maximum duration of each startup period to 180 minutes and the total pounds of NOx, CO, and POC that may be emitted during each startup. Based on operating experience at other, similar facilities, MEC, LLC expects that these limitations will be overly restrictive during true cold steam turbine startups, which may occur two or three times a year.

This proposed change would add conditions of certification that would allow elevated NOx, CO and POC emissions for up to six hours during each gas turbine tuning and cold steam turbine startup period. These activities are expected to take place only a few times per year. Additional proposed conditions will limit gas turbine combustor tuning and cold steam turbine startups to 30 hours per year for each gas turbine/HRSG and will add new recordkeeping requirements applicable during these periods.

2.2.3 Changes in Conditions Related to Initial Turbine/HRSG Commissioning

Calpine's experience in commissioning gas turbines, HRSGs and steam turbines at DEC, LMEC and other large gas turbine power plants indicates that the hourly NOx and CO emissions limits applicable during commissioning in the existing MEC Authority to Construct may be too restrictive. These hourly emission rates were provided by the applicant before other plants had been commissioned. Based on the experience gained in commissioning these other plants, MEC is proposing to increase the allowable hourly NOx and CO emission limits and the allowable daily CO emission limits during commissioning; however, no changes to the permitted daily NOx limits are being requested. Also based on the experience gained at these other plants, MEC is proposing to reduce from 300 to 50 the number of hours each gas turbine/HRSG can operate without having the SCR and oxidation catalyst systems installed. This in turn allows the Applicant to request a reduction in the allowable annual NOx emissions during the first year of project operation from 185 to 150 tons.

In addition, the Applicant is proposing to include air pollution control systems in the list of equipment that is included in commissioning activities to clarify that the ammonia injection system will also be installed and adjusted during the commissioning period.

2.2.4 Modification of Procedure for Determining Ammonia Slip Rates

MEC is also requesting a change in the method of tracking ammonia slip. The current condition requires the continuous recording of the ammonia injection rate and the determination of a correlation between the ammonia injection rate and ammonia slip concentrations through a source test. MEC proposes to change this to require the verification of ammonia slip by a District-approved ammonia slip calculation. Like the current requirement for establishing a molar ratio, the proposed change would require the correction factor used in the calculation to be established using a District-approved source test. This change will allow MEC to establish a more precise relationship between the ammonia injection rate and ammonia slip than would be possible using a simple ratio.

2.2.5 Modification of Testing and Reporting Deadlines

In Calpine's experience at other operating power plants, it has not proven possible for a source test team to complete the data analysis, sample analysis, quality assurance and report preparation necessary to produce a thorough and accurate source test report within 30 days of the source test date. Therefore, MEC is requesting that the deadline for submitting source test results to the district be extended from the current 30 days to 60 days after the source testing date.

Similarly, the current requirement that the initial performance and certification testing be performed within 60 days of startup (Conditions of Certification AQ-30 and AQ-31) is not consistent with the requirement to perform the testing within 120 days of startup in Condition of Certification AQ-12. The Applicant has also observed that 60 days may not be adequate to complete all of the required commissioning activities. Therefore, the Applicant is requesting that the 60-day limit in Conditions of Certification AQ-30 and AQ-31 and the 120-day limit in Condition of Certification AQ-12 be changed to 90 days so that all testing deadlines are consistent.

3.0 Environmental Analysis of the Project Changes

The changes to the conditions of certification for the MEC project proposed in this amendment will allow the project to be commissioned and operated in compliance with its conditions. MEC has also filed an application with the BAAQMD to change these conditions, which experience at other facilities indicates cannot be met. The proposed changes that affect facility emissions would occur only intermittently. For example, gas turbine combustor tuning is expected to take place only once or twice per year and true cold steam turbine startups are not expected to occur more than two or three times a year. Commissioning is a temporary operating condition and changes to commissioning-related emissions limits will affect only a few months of facility operation. Finally, it is important to note that the proposed changes will affect only short-term emissions limits. With the exception of the proposed reduction in first-year annual NOx emissions, the annual limits on facility emissions will not be affected by the proposed amendment.

The following disciplines will not be affected by the changes in this amendment and are not addressed:

- Land Use
- Worker Health and Safety
- Public Health
- Noise
- Socioeconomics
- Soils and Water
- Traffic and Transportation
- Waste Management
- Geologic Hazards and Resources
- Biological Resources
- Cultural Resources
- Paleontological Resources
- Hazardous Materials Management
- Water Resources
- Visual Resources

Disciplines that have the potential for environmental effects are analyzed below.

3.1 Air Quality

The potential changes to the project will affect only the air quality analysis used to support the Commission Decision for the project. Potential air quality effects of these changes are presented in Appendix A. Appendix A presents an estimate of the proposed emission increases, an ambient air quality impact analysis, and a demonstration of compliance with applicable air quality regulations. The proposed changes in conditions of certification affect only short-term NOx and CO emissions and first-year NOx emissions from the project. MEC is not proposing to change any of the existing daily or long-term annual air emissions limits for NOx or any other pollutant.

3.2 Cumulative Impacts

The cumulative impacts study area associated with the proposed changes includes the geographic area within a 5-mile radius of the MEC power plant. No new significant cumulative impacts are expected from the proposed changes relative to those presented in MEC AFC (as presented in Appendix A). These changes will not alter the assumptions or conclusions made in the Commission Decision for the MEC project.

3.3 LORS

The proposed revisions will not change the discussion presented in 99-AFC-3. These changes will not alter the assumptions or conclusions made in the Commission Decision and in fact will enhance the project's ability to comply with its conditions of certification.

4.0 Proposed Modification to the Conditions of Certification

Consistent with the requirements of CEC Siting Regulations Section 1769 (a)(1)(A), this section includes proposed modifications to the project's Conditions of Certification that need to be reviewed and approved by the CEC concurrent with the CEC review of this amendment. Appendix B contains the proposed revisions to the Air Quality Conditions of Certification for the MEC project. These proposed revisions reflect the changes specified in Section 2 of this amendment.

5.0 Potential Effects on the Public

Consistent with the CEC Siting Regulations Section 1769(a)(1)(G), this section discusses the proposed project modification affects on the public.

The proposed changes at the project site will have no noticeable effects on the public. The proposed modification will not increase annual air emissions. The infrequent, short-term changes to the air emissions are shown to have ambient air impacts similar to the air quality impacts used during licensing by the Commission. There are no public health impacts from the proposed changes. Visual and noise impacts will be negligible and will remain characteristic of the surrounding industrial land uses. The proposed changes will not affect the public.

6.0 List of Property Owners

The CEC Siting Regulations, Section 1769(a)(1)(H), requires a list of the property owners affected by the proposed modifications. The infrequent, short-term increases in NOx and CO emissions from the MEC will have no noticeable effects, so no property owners are expected to be affected by the proposed project modifications.

7.0 Potential Effects on Property Owners

Consistent with the CEC Siting Regulation Section 1769(a)(1)(I), this section addresses potential effects of the proposed changes on nearby property owners, the public, and parties in the application proceedings.

The infrequent, short-term increases in NOx and CO emissions from the MEC will have no noticeable effects on the nearby property owners.

APPENDIX

Appendix A – Air Quality Analysis

Appendix B – Proposed Changes to the Commission Decision Air Quality Conditions of Certification

APPLICATION TO THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT FOR A MODIFICATION TO THE AUTHORITY TO CONSTRUCT FOR THE METCALF ENERGY CENTER SAN JOSE, CALIFORNIA

Prepared for:

Metcalf Energy Center, LLC

November 2004

Prepared by:

Sierra Research, Inc.
1801 J Street
Sacramento, CA 95814
(916) 444-6666

SUMMARY

Metcalf Energy Center, LLC. (MEC, LLC) expects that construction of the new Metcalf Energy Center (MEC) gas turbine power plant in San Jose will soon be completed. Based on experience gained during the commissioning and operation of Calpine's other, similar gas turbine power plants (including the Delta and Los Medanos Energy Centers in Pittsburg), MEC has identified several necessary permit changes related to turbine/heat recovery steam generator (HRSG) commissioning, cold steam turbine startup and gas turbine tuning, as well as other minor administrative amendments that are needed to make the MEC permit consistent with the permits for DEC and LMEC.

Based on operating experience at DEC and LMEC, MEC expects that cold startups of the combustion turbines may take longer and require higher POC, NOx and CO emission limitations than those allowed under the current Authority to Construct. In addition, MEC is now aware that components of its turbine combustor assemblies must be replaced periodically because these components have a limited operational life. After the new combustor components are installed, each turbine's fuel system must be tuned to meet manufacturer's specifications for emissions and acoustic dynamics. During this tuning process, the turbines will need to operate at low loads intermittently for up to six hours, resulting in POC, NOx and CO emissions that are in excess of currently permitted hourly limits.

MEC also has the benefit of the combustion turbine/HRSG commissioning experience at both LMEC and DEC on which to base proposed modifications of the emission limits during commissioning operations.

MEC, LLC is requesting amendments to the MEC Authority to Construct to add new definitions for a steam turbine cold startup and gas turbine combustor tuning and to add new POC, NOx and CO emissions limitations that are applicable during these activities. Additional proposed conditions will limit the number of hours per year during which cold startups and combustor tuning may take place, and will add new recordkeeping requirements applicable during these periods. Other proposed changes include revised commissioning conditions and other minor clean-up amendments. The facility will continue to comply with existing daily and annual emissions limits.

This application support document discusses the proposed modifications, presents revised ambient air quality modeling results, demonstrates the project's continued compliance with all applicable rules and regulations, and provides proposed modifications to permit conditions.

APPLICATION TO THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT FOR A MODIFICATION TO THE AUTHORITY TO CONSTRUCT FOR THE METCALF ENERGY CENTER SAN JOSE, CALIFORNIA

TABLE OF CONTENTS

page

SUMMARY i

PART I. PROJECT DESCRIPTION 1

A. Applicant's Name and Business Description 1

B. Type of Application 1

C. Description of Proposed Project 1

D. Changes in Permitted Emissions Limits 3

PART II. AMBIENT AIR QUALITY IMPACT ANALYSIS 5

A. Air Quality Modeling Methodology 5

B. Air Quality Impact Analysis 5

C. Analysis of Ambient Air Quality Impacts under CEQA 9

D. Comparison with Significance Thresholds 10

LIST OF TABLES

page

1. New Turbine Emission Limits Applicable During Cold Startup and Combustor Tuning Periods 4
2. New Turbine Emission Limits Applicable During Startup and Shutdown 4
3. New Turbine Emission Limits Applicable During Commissioning 4
4. Detailed Calculations for Maximum Hourly and CO Emissions During Facility Operation 5
5. Emission Rates and Stack Parameters for Modeling Cold Startup/Combustor Tuning 7
6. Emission Rates and Stack Parameters for Modeling Commissioning Impacts 7
7. Summary of Results from Modeling of Cold Startup/Combustor Tuning 8
8. Summary of Results from Modeling of Commissioning Impacts 9
9. Modeled Maximum Project Impacts During Cold Startups/Combustor Tuning 9
10. Modeled Maximum Project Impacts During Commissioning Activities 10
11. Comparison of Maximum Modeled Cold Steam Turbine Startup/Combustor Tuning Impacts with Significance Thresholds 10

LIST OF ATTACHMENTS

Attachment 1: Revisions to Permit Conditions

PART I. PROJECT DESCRIPTION

A. Applicant's Name and Business Description

Name: Metcalf Energy Center, LLC

Address: 1 Blanchard Road
P.O. Box 13190
San Jose, CA 96013

Contact: Dana Petrin, Compliance Manager South Bay Projects
(408) 592-7915

Mailing Address for Permits:

Same as above, with copy to:

Sierra Research
1801 J Street
Sacramento, CA 95814

General Business Description: Electric Generation

Responsible Official:

Robert McCaffrey, General Manager
South Bay Projects

Air Quality Consultants:

Sierra Research
1801 J Street
Sacramento, CA 95814
Contact: Nancy Matthews
(916) 444-6666

Type of Use Entitlement: Metcalf Energy Center will continue to own and operate the project.

Estimated Construction Date: Issuance of the revised Authority to Construct is requested as soon as possible to allow the facility to begin operation in compliance with all applicable emissions limitations.

B. Type of Application

This is an application for modification to an existing Authority to Construct.

C. Description of the Proposed Project

1. Startups, Shutdowns and Combustor Tuning

Metcalf Energy Center's Authority to Construct allows the turbines to exceed their standard hourly emissions limitations during routine startups and shutdowns. The conditions in the Authority to Construct limit the maximum duration of each startup period to 180 minutes and limit the hourly and total pounds of NOx, CO, and POC that may be emitted during each startup.

Based on several years of operating experience at Calpine's DEC and LMEC power plants that utilize similar gas turbine, HRSG and steam turbine technology, MEC anticipates that the current hourly emissions limitations during startup will be overly restrictive in some cases, although the limits on total emissions per three-hour start are expected to be achievable. Similarly, MEC believes that the current limitations on shutdown emissions are too stringent and need to be changed. In addition, the existing NOx, CO and POC limitations may be overly restrictive during true cold startups, which may occur two or three times a year. Analysis of the hourly CEM data collected during steam turbine cold startups at other facilities shows that most of these emissions occur during the first three hours of the startup period. While CO and NOx emission rates drop off quickly after the third hour, emissions of both pollutants may not come into compliance for up to six hours after initial startup.

Finally, MEC has determined based on operating experience at other gas turbine plants that replacement of components of turbine combustor assemblies will be required periodically as these components reach the end of their operational life. After the new combustor components are installed, the turbine's fuel system must be tuned to meet manufacturer's specifications for emissions and combustion dynamics. As part of the tuning process, the turbine must operate intermittently at low loads for up to six hours. During this time, NOx, CO and POC emissions will exceed permitted hourly limits. Combustor tuning is expected to take place up to six times per year.

In this application, MEC is requesting the following changes to the existing permit conditions related to startup, shutdown and combustor tuning:

- eliminate the current hourly limits on NOx, CO and POC emissions during startup, while retaining the overall emissions limits for the three-hour startup periods
- revise the current limits that apply during shutdowns
- add new definitions for cold startup and combustor tuning periods, with durations of six hours per period;
- limit the allowable number of hours of steam turbine cold startup and gas turbine combustor tuning to 30 hours per calendar year for each turbine;
- add a new NOx mass emission limit of 480 lb/period that will apply during steam turbine cold startup and gas turbine combustor tuning periods;
- add a new CO mass emission limit of 5,028 lb/period that will apply during a steam turbine cold startup and gas turbine combustor tuning periods;
- add a new POC mass emission limit of 96 lb/period that will apply during cold startup and combustor tuning periods;
- change the current CO limits during commissioning from 930 lb/hr to 5,000 lb/hr and from 11,498 lb/day to 20,000 lb/day;
- reduce the number of firing hours for the commissioning period during which the Gas Turbines/HRSGs can be operated without SCR or oxidation catalyst control from 300 hours per GT/HRSG to 50 hours per GT/HRSG.
- reduce the allowable total NOx emissions during the first year of project operation from 185 to 150 tons; and
- add new recordkeeping requirements that will apply during cold startup and combustor tuning.

MEC is not proposing to change any of the existing daily or long-term annual emissions limits.

2. Commissioning Activities

Calpine's experience in commissioning gas turbines, HRSGs and steam turbines at DEC, LMEC and other large gas turbine power plants indicates that the hourly CO emissions limits applicable during commissioning in the existing MEC Authority to Construct may be too restrictive. These hourly emission rates were provided by the applicant before other plants had been commissioned. Based on the experience gained in commissioning these other plants, MEC is proposing to increase the allowable hourly CO emission limits from 930 lb/hr to 5,000 lb/hr and the allowable daily CO emission limits from 11,498 lb/day to 20,000 lb/day during commissioning. In addition, Calpine has determined that the commissioning activities that require operation of the gas turbine/HRSG without the SCR or oxidation catalyst systems installed can be accomplished in 50 operating hours rather then requiring 300 hours, as originally proposed. The reduction in uncontrolled operating hours will allow MEC to reduce the allowable NOx emissions from the facility during the first year of operation from 185 tons to 150 tons.

In addition, we are proposing to include air pollution control systems in the list of equipment that is included in commissioning activities to clarify that the ammonia injection system will also be installed and adjusted during the commissioning period.

3. Testing and Reporting Deadlines

In Calpine's experience at other operating power plants, it has not proven possible for a source test team to complete the data analysis, sample analysis, quality assurance and report preparation necessary to produce a thorough and accurate source test report within 30 days of the source test date. Therefore, MEC is requesting that the deadline for submitting source test results to the district be extended from the current 30 days to 60 days after the source testing date.

Similarly, the current requirement that the initial performance and certification testing be performed within 60 days of startup (Conditions 30 and 31) is not consistent with the requirement to perform the testing within 120 days of startup in Condition 12. We have also found that 60 days may not be adequate to complete all of the required commissioning activities. Therefore, we are requesting that the 60-day limit in Conditions 30 and 31 and the 120-day limit in Condition 12 be changed to 90 days for consistency.

This change will not have any impact on annual facility emissions.

4. Ammonia Slip Calculation

MEC is also requesting a change in the method of tracking ammonia slip. The current condition requires the continuous recording of the ammonia injection rate and the determination of a correlation between the ammonia injection rate and ammonia slip concentrations through a source test. MEC proposes to change this to require the verification of ammonia slip by a District-approved ammonia slip calculation. Like the current requirement for establishing a molar ratio, the proposed change would require the correction factor used in the calculation to be established using a District-approved source test. This change will allow MEC to establish a more precise relationship between the ammonia injection rate and ammonia slip than would be possible using a simple ratio.

D. Changes in Permitted Emissions Limits

Table 8.1-16 of the May 1999 application for Authority to Construct showed the maximum turbine emission rates during startup. Table 8.1-17 of Supplement C (filed in May 2000) showed the calculation of maximum hourly emissions from the facility. These tables have been revised to reflect the proposed new NOx, CO and POC emission limits applicable during steam turbine cold startup and gas turbine combustor tuning activities, to eliminate the current hourly limit on emissions during startup, and to revise the hourly limits that apply during shutdown. POC emissions are currently limited to 48 pounds during a three-hour startup and have been scaled up to 96 pounds per cold startup or combustor tuning period to reflect the longer duration.

Table 3 shows the proposed new hourly NOx and CO limits that would apply during commissioning activities. Table 4 shows revised calculations for maximum hourly facility emissions during routine operation.

Previous emission rates and limits are shown in parentheses.

Table 1
New Turbine Emission Limits Applicable During Cold Startup and Combustor Tuning Periods
(Revised 11/04)

	NOx	CO	POC
Cold Startup or Combustor Tuning, lb/period[a]	480 (240)	5,028 (2,514)	96 (48)

a. Maximum of six hours per period.

Table 2
New Turbine Emission Limits Applicable During Startup and Shutdown
(Revised 11/04)

	NOx	CO	POC
Startup, lb/hour and lb/start[a]	240 (80/240)	2,514 (902/2,514)	48 (16/48)
Shutdown, lb/hour[b]	80 (18)	902 (43.8)	16 (5)

a. Eliminate hourly limits.
b. Maximum of one hour for shutdown.

Table 3
New Turbine Emission Limits Applicable During Commissioning
(Revised 11/04)

	NOx	CO
Commissioning, lb/hour (total, two turbines/HRSGs)	381.2 (no change)	5,000 (930)
Commissioning, lb/day (total, two turbines/HRSGs)	4,805 (no change)	20,000 (11,498)

Table 4
Detailed Calculations for Maximum Hourly NOx and CO Emissions During Facility Operation
(Revised 11/04)

Emissions Unit	NOx, lb/hr		CO, lb/hr	
	Base Load	Startup	Base Load	Startup
Turbine 1 and 2, No DB (each)	18.1	240 (80)	26.03	2,514 (902)
Turbine 1 and 2, w/DB (each)	19.2	n/a	28.07	n/a
Cooling Tower	n/a	n/a	n/a	n/a
Emergency Generator	n/a	n/a	3.02	n/a
Fire Pump Diesel Engine	3.9	n/a	n/a	n/a

Emissions Unit	Maximum NOx, lb/hr	Maximum CO, lb/hr
Turbine 1	240 (80)	2,514 (902)
Turbine 2	19.2	28.07
Cooling Tower	0	0
Emergency Generator	n/a	3.02
Fire Pump Diesel Engine	3.9	n/a
Total, all sources	263.1 (103.1)	2,545.1 (931.32)

PART II. AMBIENT AIR QUALITY IMPACT ANALYSIS

A. Air Quality Modeling Methodology

As for the original MEC application, the assessment of impacts from the facility on ambient air quality has been conducted using the EPA guideline ISCST3 model and meteorological data collected during 1993 by IBM at its facility about three miles northwest of the proposed project site. The ISC_OLM model with concurrent hourly ozone data from San Jose was used to evaluate maximum one-hour average NO_2 impacts. The proposed modification affects maximum hourly emissions during regular turbine startups, cold startup and combustor tuning periods, and the commissioning period. The proposed modification also affects maximum daily CO emissions during the commissioning period. Maximum daily and annual emissions are otherwise unchanged. Further, SO_2 and PM_{10} emissions are not elevated above normal operating limits during startup, tuning or commissioning activities. Therefore, only the one-hour average NOx and CO impacts and the eight-hour average CO impacts have been reevaluated.

B. Air Quality Impact Analysis

The facility layout used for the modeling analysis reflects the layout used by the District in its PDOC and FDOC analyses. Only cold startup/combustor tuning impacts are evaluated in the startup modeling analysis, as routine startups will continue to have the same or lower emissions than cold startups and thus will have lower ambient impacts.

1. Revised Air Quality Impact Analysis for Startup Conditions

Startup modeling parameters were shown in Table 8.1-20 of the April 1999 application. Table 8.1B-4 of Appendix 8.1B to Supplement C (February 2000) showed emission rates and stack parameters for modeling eight-hour average CO. Table 5 below summarizes the modeling parameters used for this revised startup analysis.[1] The modeling parameters are identical to those used in the previous analysis except for the emission rates.

As Calpine has indicated previously, only one gas turbine will be in startup mode at a time. Further, only one gas turbine will be supporting a steam turbine cold startup or gas combustor tuning operation at a time. For the eight-hour averaging period, emissions for the modeling analysis have been calculated assuming that one turbine initiates a six-hour steam turbine cold startup or gas turbine combustor tuning period at the beginning of the eight-hour period and the second turbine initiates a cold startup or combustor tuning period during the last two hours of the eight-hour period. This scenario conservatively overestimates facility CO emissions during a cold startup or combustor tuning period because once the steam turbine has been brought up to temperature by the first turbine as a result of either cold startup or combustor tuning activities, the second turbine would not require the long holds at low turbine loads that qualify as a cold startup and lead to high CO levels. While there are many different possible scenarios, we have chosen one which, while unrealistic (in the sense that it would result in a violation of the daily emissions limit for CO) presents a conservative upper bound of the project's 8-hr average CO impacts.

[1] As SO_2 emissions are not affected by this proposed amendment, one- and three-hour startup impacts for this pollutant are not modeled.

Table 5
Emission Rates and Stack Parameters for Modeling Cold Startup/Combustor Tuning
(Revised 11/04)

	Stack Diam, m	Stack Height, m	Exh Temp, Deg K	Exhaust Flow, m^3/s	Exhaust Vel, m/s	Emission Rate, g/s	
						NOx	CO
Averaging Period: One Hour							
Turbine 1/HRSG	5.49	44.2	349.7	347.9	14.96	60.48	633.528
Turbine 2/HRSG	5.49	44.2	349.7	451.3	19.09	2.42	3.537
Averaging Period: Eight Hours							
Turbine 1/HRSG	5.49	44.2	349.7	451.3	19.09	n/a	80.08[a]
Turbine 2/HRSG	5.49	44.2	349.7	451.3	19.09	n/a	79.19[b]
Emergency Generator	0.229	9.144	649.1	2.0	48.41	n/a	0.047[c]

a. Based upon one 6-hour cold startup or combustor tuning period (5,028 lb/period) and two hours of base load operation with duct firing.
b. Based upon two hours of cold startup or combustor tuning (5,028 lb/period).
c. Based upon one hour of operation during the eight-hour averaging period.

2. Revised Ambient Air Quality Impacts Analysis for Commissioning Impacts

The modeling analysis of ambient impacts during commissioning uses the same part-load stack parameters that were used for turbine startup (representing 70% load), consistent with the analysis prepared for the original application. As a worst case, the analysis assumes that both turbines are being commissioned simultaneously, with each emitting half of the allowable emissions during the averaging period. Modeling parameters using in the revised commissioning impacts analysis are summarized in Table 6.

Table 6
Emission Rates and Stack Parameters for Modeling Commissioning Impacts
(Revised 11/04)

	Stack Diam, m	Stack Height, m	Exh Temp, Deg K	Exhaust Flow, m3/s	Exhaust Vel, m/s	Emission Rate, g/s[a]		
						NOx	1-hr CO	8-hr CO
Turbine 1/HRSG	5.49	44.2	349.7	347.9	14.96	24.02	315.0	39.37
Turbine 2/HRSG	5.49	44.2	349.7	347.9	14.96	24.02	315.0	39.38

a. Assumes both turbines in commissioning. For one-hour impacts, assume each unit emits half of the permitted hourly emission rate. For eight-hour impacts, assume each unit emits half of the permitted daily emission rate during the period.

The receptor grids were derived from 30x30-meter DEM data. The original coarse receptor grid was used with ISCST3 to find the general locations of the modeled maximum concentrations. Thirty-by-thirty-meter refined receptor grids were used to find localized maxima.

3. PSD Evaluation

The PSD program was established to allow emission increases that do not result in significant deterioration of ambient air quality in areas where criteria pollutant concentrations have not exceeded the national ambient air quality standards. For purposes of determining applicability of the PSD program requirements, emissions from the facility are evaluated to determine whether the potential increase in emissions will be significant. Because this is an application for a modification to a new major facility, the comparison is made between the PSD significance levels in BAAQMD Rule 2-2-233 and the difference between the permitted and proposed new potentials to emit. As there is no change in the annual potential to emit, no additional analysis is required.

Although the increases in emissions of all criteria pollutants are below the emissions thresholds of Rules 2-2-304, 305, and 306, air quality impacts of the proposed revisions must be reviewed to demonstrate that the proposed modifications will not change the original conclusions regarding regulatory requirements for the facility.

Emissions from normal facility operation were modeled under various meteorological and operating conditions to ensure that the worst-case impacts are evaluated. These conditions were as follows:

- Turbine startup,
- Turbine commissioning, and
- Normal facility operation.

The turbine/HRSG emissions and stack parameters have not changed, so no revisions to the original turbine commissioning, inversion breakup and shoreline fumigation analyses are needed. As only NOx and CO emissions are affected, PM_{10} and SOx have been excluded from the revised modeling analysis.

a. Results of the Ambient Air Quality Modeling Analysis

The maximum modeled 8-hour CO impacts and revised maximum one-hour average NO_2 and CO impacts during cold startup/combustor tuning are summarized in Table 7 below; impacts during commissioning are shown in Table 8.

Table 7
Summary of Results from Modeling of Cold Startup/Combustor Tuning
(Revised 11/04)

Pollutant	Averaging Time	Max. Modeled Concentration ($\mu g/m^3$)
NO_2	1 hour	187.9
CO	1 hour	10,882
	8 hours	875

a NOx converted to NO_2 using ISC_OLM and concurrent ozone data from San Jose.

Table 8
Summary of Results from Modeling of Commissioning Impacts
(Revised 11/04)

Pollutant	Averaging Time	Max. Modeled Concentration ($\mu g/m^3$)
NO_2	1 hour	192.8
CO	1 hour	9,938
	8 hours	483

a NOx converted to NO_2 using ISC_OLM and concurrent ozone data from San Jose.

C. Analysis of Ambient Air Quality Impacts under CEQA

To determine the maximum ground-level impacts on ambient air quality for comparison with the applicable state and federal ambient air quality standards, modeled worst-case impacts from Tables 7 and 8 were added to maximum existing pollutant concentrations in the area.[2] Maximum ground-level impacts for allowable operation of the facility are shown together with the ambient air quality standards in Tables 9 and 10. The implementation of the proposed new permit limits will not cause any new violations of the ambient air quality standards.

Table 9
Modeled Maximum Project Impacts During Cold Startups/Combustor Tuning
(Revised 11/04)

Pollutant	Averaging Period	Maximum Facility Impact (µg/m3)	Background[a] (µg/m3)	Total Impact (µg/m3)	State Standard (µg/m3)	Federal Standard (µg/m3)
NO_2	1 hour	187.9	214	402	470	n/a
CO	1 hour	10,882	11,125	22,007	23,000	40,000
	8 hours	875	7,811	8,686	10,000	10,000

a Background concentrations reflect highest monitored concentrations from San Jose monitoring stations, 2000, 2001 and 2003.*

[2] Background concentrations have been updated to reflect the most recent available ambient monitoring data from ARB, EPA and BAAQMD. The San Jose 4th Street station was shut down in early 2002 and the Jackson Street station did not start up until late 2002, so data for 2002 are incomplete.

Table 10
Modeled Maximum Project Impacts During Commissioning Activities
(Revised 11/04)

Pollutant	Averaging Period	Maximum Facility Impact (µg/m3)	Background[a] (µg/m3)	Total Impact (µg/m3)	State Standard (µg/m3)	Federal Standard (µg/m3)
NO_2	1 hour	192.8	214	407	470	n/a
CO	1 hour	9,938	11,125	21,063	23,000	40,000
	8 hours	483.3	7,811	8,294	10,000	10,000

a. Background concentrations reflect highest monitored concentrations from San Jose monitoring stations, 2000, 2001 and 2003.*

D. Comparison with Significance Thresholds

The maximum facility impacts must also be compared with PSD and BAAQMD significance levels to determine whether further analysis is required. Table 11 shows that the maximum modeled impacts during startup or combustor tuning activities will exceed significance levels. However, as shown in Tables 9 and 10 above, the maximum modeled impacts during startup or commissioning, combined with existing background concentrations, will not cause the state ambient standards to be exceeded.

Table 11
Comparison of Maximum Modeled Cold Steam Turbine Startup/Combustor Tuning Impacts with Significance Thresholds
(Revised 11/04)

Pollutant	Averaging Period	Maximum Modeled Impact (ug/m3)	Significant Air Quality Impact Level (ug/m3)
NO_2	1 hour	187.9	19
CO	1 hour	10,882	2,000
	8 hours	875	500

CONDITIONS OF CERTIFICATION

METCALF ENERGY CENTER

PERMIT CONDITIONS

Definitions:

Clock Hour:	Any continuous 60-minute period beginning on the hour.
Calendar Day:	Any continuous 24-hour period beginning at 12:00 AM or 0000 hours.
Year:	Any consecutive twelve-month period of time
Heat Input:	All heat inputs refer to the heat input at the higher heating value (HHV) of the fuel, in BTU/scf.
Rolling 3-hour period:	Any three-hour period that begins on the hour and does not include start-up or shutdown periods.
Firing Hours:	Period of time during which fuel is flowing to a unit, measured in fifteen minute increments.
MM BTU:	million british thermal units
Gas Turbine Start-up Mode:	The lesser of the first 180 minutes of continuous fuel flow to the Gas Turbine after fuel flow is initiated or the period of time from Gas Turbine fuel flow initiation until the Gas Turbine achieves two consecutive CEM data points in compliance with the emission concentration limits of conditions 20(b) and 20(d).
Gas Turbine Shutdown Mode:	The lesser of the 30 minute period immediately prior to the termination of fuel flow to the Gas Turbine or the period of time from non-compliance with any requirement listed in Conditions 20(b) through 20(d) until termination of fuel flow to the Gas Turbine.
Gas Turbine Cold Startup Period:	The lesser of the first 360 minutes of continuous fuel flow to the Gas Turbine after fuel flow is initiated or the period of time from Gas Turbine fuel flow initiation until the Gas Turbine achieves two consecutive CEM data points in compliance with the emission concentration limits of condition 20(b), following a shutdown of at least 72 hours.
Specified PAHs:	The polycyclic aromatic hydrocarbons listed below shall be considered to Specified PAHs for these permit conditions. Any emission limits for Specified PAHs refer to the sum of the emissions for all six of the following compounds. Benzo[a]anthracene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene Dibenzo[a,h]anthracene Indeno[1,2,3-cd]pyrene

Corrected Concentration:	The concentration of any pollutant (generally NO_x, CO, or NH_3) corrected to a standard stack gas oxygen concentration. For emission point P-1 (combined exhaust of S-1 Gas Turbine and S-2 HRSG duct burners) and emission point P-2 (combined exhaust of S- 3 Gas Turbine and S-4 HRSG duct burners) the standard stack gas oxygen concentration is 15% O_2 by volume on a dry basis
Commissioning Activities:	All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the MEC construction contractor to insure safe and reliable steady state operation of the gas turbines, heat recovery steam generators, steam turbine, air pollution control systems and associated electrical delivery systems.
Commissioning Period:	The Period shall commence when all mechanical, electrical, and control systems are installed and individual system start-up has been completed, or when a gas turbine is first fired, whichever occurs first. The period shall terminate when the plant has successfully completed performance testing, is available for commercial operation, and has initiated sales to the power exchange. The commissioning period shall not exceed 180 days unless extended by the APCO upon the owner/operator's prior written request for additional commissioning period time.
Combustor Tuning Activities:	Any testing, adjustment, tuning, and calibration activities recommended by the gas turbine manufacturer to insure safe and reliable steady-state operation of the gas turbines following replacement of the combustor components, during seasonal tuning events, or at other times when recommended by the turbine manufacturer or necessary to maintain low emissions performance. This includes, but is not limited to, adjusting the amount of fuel distributed between the combustion turbine's staged fuel systems to simultaneously minimize NOx and CO production while minimizing combustor dynamics and ensuring combustor stability.
Combustor Tuning Period:	The period, not to exceed 360 minutes, during which combustor tuning activities are taking place.
Precursor Organic Compounds (POCs):	Any compound of carbon, excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate

CEC CPM: California Energy Commission Compliance Program Manager

MEC: Metcalf Energy Center

CONDITIONS FOR THE COMMISSIONING PERIOD

AQ-1. The owner/operator of the Metcalf Energy Center (MEC) shall minimize emissions of carbon monoxide and nitrogen oxides from S-1 and S-3 Gas Turbines and S-2 and S-4 Heat Recovery Steam Generators (HRSGs) to the maximum extent possible during the commissioning period. Conditions 1 through 12 shall only apply

during the commissioning period as defined above. Unless otherwise indicated, Conditions 13 through 4~~97~~ shall apply after the commissioning period has ended.

Verification: The owner/operator shall submit a monthly compliance report to the California Energy Commission Compliance manager (CPM). In this report the owner/operator shall indicate how this Condition is being implemented.

AQ-2. At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the S-1 & S-3 Gas Turbine combustors and S-2 & S-4 Heat Recovery Steam Generator duct burners shall be tuned to minimize the emissions of carbon monoxide and nitrogen oxides.

Verification: In the monthly compliance report the owner/operator shall indicate how this Condition is being implemented.

AQ-3. At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the A-1 and A-2 SCR Systems shall be installed, adjusted, and operated to minimize the emissions of carbon monoxide and nitrogen oxides from S-1 & S-3 Gas Turbines and S-2 & S-4 Heat Recovery Steam Generators.

Verification: In the monthly compliance report the owner/operator shall indicate how this Condition is being implemented.

AQ-4. Coincident with the steady-state operation of A-1 & A-2 SCR Systems pursuant to conditions 3, 10, 11, and 12, the Gas Turbines (S-1 & S-3) and the HRSGs (S-2 & S-4) shall comply with the NO_x and CO emission limitations specified in conditions 20(a) through 20(d).

Verification: In the monthly compliance report the owner/operator shall indicate how this Condition is being implemented.

AQ-5. The owner/operator of the MEC shall submit a plan to the District Permit Services Division and the CEC CPM at least four weeks prior to first firing of S-1 or S-3 Gas Turbines describing the procedures to be followed during the commissioning of the turbines, HRSGs, and steam turbine. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the Dry-Low-NO_x combustors, the installation and operation of the required emission control systems, the installation, calibration, and testing of the CO and NO_x continuous emission monitors, and any activities requiring the firing of the Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4) without abatement by their respective SCR Systems. Neither Gas Turbine (S-1 or S-3) shall be fired sooner than 28 days after the District receives the commissioning plan.

Verification: At least twenty-eight (28) days prior to first firing of the gas turbines, the Project owner shall submit a complete commissioning plan.

AQ-6. During the commissioning period, the owner/operator of the MEC shall demonstrate compliance with conditions 8 through 10 through the use of properly operated and maintained continuous emission monitors and data recorders for the following parameters:

- firing hours
- fuel flow rates
- stack gas nitrogen oxide emission concentrations,
- stack gas carbon monoxide emission concentrations
- stack gas oxygen concentrations.

The monitored parameters shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation) for the Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4). The owner/operator shall use District-approved methods to calculate heat input rates, nitrogen dioxide mass emission rates, carbon monoxide mass emission rates, and NO_x and CO emission concentrations, summarized for each clock hour and each calendar day. All records shall be retained on site for at least 5 years from the date of entry and made available to District personnel upon request.

Verification: In the monthly compliance report the owner/operator shall indicate how this Condition is being implemented.

AQ-7. The District-approved continuous monitors specified in condition 8 shall be installed, calibrated, and operational prior to first firing of the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4). After first firing of the turbines, the detection range of these continuous emission monitors shall be adjusted as necessary to accurately measure the resulting range of CO and NO_x emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval.

Verification: In the monthly compliance report to the CPM the owner/operator shall indicate how this Condition is being implemented.

AQ-8. The total number of firing hours of S-1 Gas Turbine and S-2 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-1 SCR System shall not exceed ~~300~~ 50 hours during the commissioning period. Such operation of S-1 Gas Turbine and S-2 HRSG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system in place. Upon completion of these activities, the owner/operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

Verification: In the monthly compliance report the owner/operator shall indicate the cumulative number of firing hours without SCR. The owner/operator shall submit a copy of the completion notice to the CPM.

AQ-9. The total number of firing hours of S-3 Gas Turbine and S-4 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-3 SCR System shall not exceed ~~300~~ 50 hours during the commissioning period. Such operation of S-3 Gas Turbine and S-4 HRSG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system in place. Upon completion of these activities, the owner/operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

Verification: In the monthly compliance report the owner/operator shall indicate the cumulative number of firing hours without SCR. The owner/operator shall submit a copy of the completion notice to the CPM.

AQ-10. The total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM_{10}, and sulfur dioxide that are emitted by the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4) during the commissioning period shall accrue towards the consecutive twelve-month emission limitations specified in condition ~~25~~26, except that total, cumulative NO_x mass emissions from S-1, S-2, S-3, and S-4 shall not exceed ~~185~~ 150 tons during any consecutive twelve-month period which includes a portion of the Commissioning Period.

Verification: In the monthly compliance report the owner/operator shall indicate the cumulative number of firing hours without SCR. The owner/operator shall submit a copy of the completion notice to the CPM.

AQ-11. Combined pollutant mass emissions from the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4) shall not exceed the following limits during the commissioning period. These emission limits shall include emissions resulting from the start-up and shutdown of the Gas Turbines (S-1 & S-3).

NOx (as NO_2)	4,805 pounds per calendar day	381.2 pounds per hour
CO	~~11,498~~20,000 pounds per calendar day	~~930~~ 5000 pounds per hour
POC (as CH_4)	495 pounds per calendar day	
PM_{10}	468 pounds per calendar day	
SO_2	42 pounds per calendar day	

Verification: In the monthly compliance report the owner/operator shall indicate any violations of the above emission limits.

AQ-12. Prior to the end of the Commissioning Period and not later than ~~120~~ 90 days after commencement of the commissioning period, the Owner/Operator shall conduct a District and CEC approved source test using external continuous emission monitors to determine compliance with condition 21. The source test shall determine NO_x, CO, and POC emissions during start-up and shutdown of the gas turbines. The POC emissions shall be analyzed for methane and ethane to account for the presence of unburned natural gas. The source test shall include a minimum of three start-up and three shutdown periods. Twenty working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CEC Compliance Program Manager (CPM) a detailed source test plan designed to satisfy the requirements of this condition. The District and the CEC CPM will notify the Owner/Operator of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CEC CPM comments into the test plan. The Owner/Operator shall notify the District and the CEC CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CEC CPM within ~~30~~60 days of the source testing date.

Verification: Approval of the source test plan and receipt of the source test reports is the verification of compliance with this Condition.

Conditions for the Gas Turbines (S-1 & S-3) and the Heat Recovery Steam Generators (HRSGs; S-2 & S-4)

AQ-13. The Gas Turbines (S-1 and S-3) and HRSG Duct Burners (S-2 and S-4) shall be fired exclusively on natural gas. (BACT for SO_2 and PM_{10})

Verification: As part of the semiannual Air Quality Reports ~~(as required by **AQ-43**)~~, the project owner shall indicate the date, time, and duration of any violation of this Condition.

AQ-14. The combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2 and S-3 & S-4) shall not exceed 2,124 MM BTU per hour, averaged over any rolling 3-hour period. (PSD for NO_x)

Verification: As part of the Air Quality monthly Reports, the owner/operator shall include information on the date and time when the hourly fuel consumption exceeded this hourly limit.

AQ-15. The combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2 and S-3 & S-4) shall not exceed 49,908 MM BTU per calendar day. (PSD for PM_{10})

Verification: As part of the Air Quality monthly Reports, the owner/operator shall include information on the date and time when the daily fuel consumption exceeded this daily limit.

AQ-16. The combined cumulative heat input rate for the Gas Turbines (S-1 & S-3) and the HRSGs (S-2 & S-4) shall not exceed 35,274,060 MM BTU per year. (Offsets)

Verification: As part of the Air Quality monthly Reports, the owner/operator shall include information on the date and time when the ~~daily~~ annual fuel consumption exceeded this ~~daily~~ annual limit.

AQ-17. The HRSG duct burners (S-2 and S-4) shall not be fired unless its associated Gas Turbine (S-1 and S-3, respectively) is in operation. (BACT for NO_x)

Verification: As part of the Air Quality Reports, the project owner shall indicate the date, time, and duration of any violation of this permit Condition.

AQ-18. S-1 Gas Turbine and S-2 HRSG shall be abated by the properly operated and properly maintained A-1 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at those sources and the A-1 catalyst bed has reached minimum operating temperature. (BACT for NO_x)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

AQ-19. S-3 Gas Turbine and S-4 HRSG shall be abated by the properly operated and properly maintained A-2 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at those sources and the A-2 catalyst bed has reached minimum operating temperature. (BACT for NO_x)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

AQ-20. The Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4) shall comply with requirements (a) through (h) under all operating scenarios, including duct burner firing mode and steam injection power augmentation mode. Requirements (a) through (h) do not apply during a gas turbine startup, ~~or~~ a Gas Turbine shutdown, a Gas Turbine cold startup, or a combustor tuning period. (BACT, PSD, and Toxic Risk Management Policy)

(a) Nitrogen oxide mass emissions (calculated as NO_2) at P-1 (the combined exhaust point for the S-1 Gas Turbine and the S-2 HRSG after abatement by A-1 SCR System) shall not exceed 19.2 pounds per hour or 0.00904 lb/MM BTU (HHV) of natural gas fired. Nitrogen oxide mass emissions (calculated as NO_2) at P-2 (the combined exhaust point for the S-3 Gas Turbine and the S-4 HRSG after abatement by A-3 SCR System) shall not exceed 19.2 pounds per hour or 0.00904 lb/MM BTU (HHV) of natural gas fired. (PSD for NO_x)

(b) The nitrogen oxide emission concentration at emission points P-1 and P-2 each shall not exceed 2.5 ppmv, on a dry basis, corrected to 15% O_2, averaged over any 1-hour period. (BACT for NO_x)

(c) Carbon monoxide mass emissions at P-1 and P-2 each shall not exceed 0.0132 lb/MM BTU (HHV) of natural gas fired or 28.07 pounds per hour, averaged over any rolling 3 hour period. (PSD for CO)

(d) The carbon monoxide emission concentration at P-1 and P-2 each shall not exceed 6.0 ppmv, on a dry basis, corrected to 15% O_2, when the heat input to the combustion turbine exceeds 1700 MM BTU/hr (HHV), averaged over any rolling 3-hour period. If compliance source test results and continuous emission monitoring data indicate that a lower CO emission concentration level can be achieved on a consistent basis (with a suitable compliance margin) over the entire range of turbine operating conditions, including duct firing and power steam augmentation operations, and over the entire range of ambient conditions, the District will reduce this limit to a level not lower than 4.0 ppmv, on a dry basis, corrected to 15% O_2. If this limit is reduced, the corresponding mass emission rate limit specified in condition 20(c) shall also be modified to reflect this reduction. (BACT for CO)

(e) Ammonia (NH_3) emission concentrations at P-1 and P-2 each shall not exceed 5 ppmv, on a dry basis, corrected to 15% O_2, averaged over any rolling 3-hour period. This ammonia emission concentration shall be verified by ~~the continuous recording of the ammonia injection rate to A-1 and A-2 SCR Systems~~a District-approved ammonia slip calculation. The ~~correlation between the gas turbine and HRSG heat input rates, A-1 and A-2 SCR System ammonia injection rates, and corresponding ammonia emission concentration at emission points P-1 and P-2~~factors to be used in the calculation shall be determined in accordance with permit condition 3~~2~~0. (TRMP for NH_3)

(f) Precursor organic compound (POC) mass emissions (as CH_4) at P-1 and P-2 each shall not exceed 2.7 pounds per hour or 0.00126 lb/MM BTU of natural gas fired. (BACT)

(g) Sulfur dioxide (SO_2) mass emissions at P-1 and P-2 each shall not exceed 1.28 pounds per hour or 0.0006 lb/MM BTU of natural gas fired. (BACT)

(h) Particulate matter (PM_{10}) mass emissions at P-1 and P-2 each shall not exceed 9 pounds per hour or 0.00452 lb PM_{10}/MM BTU of natural gas fired when HRSG duct burners are not in operation. Particulate matter (PM_{10}) mass emissions at P-1 and P-2 each shall not exceed 12 pounds per hour or 0.00565 lb PM_{10}/MM BTU of natural gas fired when HRSG duct burners are in operation. (BACT)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall indicate the date, time, and duration of any violation of this Condition. The owner/operator shall also include quantitative information on the severity of the violation.

AQ-21. The regulated air pollutant mass emission rates from each of the Gas Turbines (S-1 and S-3) during a start-up or a shutdown or during a combustor tuning period shall not exceed the limits established below. (PSD)

	Start-Up (lb/start-up)	~~Start-Up (lb/hr)~~	Cold Startup or Combustor Tuning (lb/period)	Shutdown (lb/shutdown)
Oxides of Nitrogen (as NO_2)	240	~~80~~	480	~~188~~0
Carbon Monoxide (CO)	2,514	~~902~~	5,028	~~43.8~~902
Precursor Organic Compounds (as CH_4)	48	~~16~~	96	~~5~~16

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall indicate the date, time, and duration of any violation of this Condition. The owner/operator shall also include quantitative information on the severity of the violation.

AQ-22. Not more than one of ~~T~~the Gas Turbines (S-1 and S-3) shall ~~not~~ be in start-up mode or undergoing combustor tuning simultaneously. (PSD)

Verification: In the monthly compliance report the owner/operator shall indicate any violations of this Condition.

AQ-23. The total number of hours during which the Gas Turbines (S-1 and S-3) may be operated in cold startup or may undergo combustor tuning shall not exceed 30 hours per year total for each Gas Turbine.

Verification: As part of the annual Air Quality Reports, the project owner shall indicate the date, time, and duration of any violation of this Condition.

~~**23.AQ-24.**~~ The heat recovery steam generators (S-2 & S-4) and associated ducting shall be designed and constructed such that an oxidation catalyst can be readily installed and properly operated if deemed necessary by the APCO to insure compliance with the CO emission rate limitations of conditions 20(c) and 20(d). (BACT)

Verification: In the semiannual air quality compliance report the owner/operator shall indicate how this Condition is being implemented.

~~**24.AQ-25.**~~ Total combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3, and S-4), including emissions generated during Gas Turbine start-ups, Gas Turbine ~~and~~ shutdowns and Gas Turbine Combustor tuning activities shall not exceed the following limits during any calendar day:

(a) 1,362.6 pounds of NO_x (as NO_2) per day	(CEQA)
(b) 7,891.1 pounds of CO per day	(PSD)
(c) 230.2 pounds of POC (as CH_4) per day	(CEQA)
(d) 510 pounds of PM_{10} per day	(PSD)
(e) 57.9 pounds of SO_2 per day	(BACT)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

~~**25.AQ-26.**~~ Cumulative combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3, and S-4), including emissions generated during gas turbine start-ups, Gas Turbine ~~and~~ shutdowns and Gas Turbine Combustor tuning activities shall not exceed the following limits during any consecutive twelve-month period:

(a) 123.4 tons of NO_x (as NO_2) per year	(Offsets)

(b) 588 tons of CO per year (Cumulative Increase, PSD)
(c) 28 tons of POC (as CH_4) per year (Offsets)
(d) 83.34 tons of PM_{10} per year (Offsets)
(e) 10.6 tons of SO_2 per year (Cumulative Increase)

Verification: As part of the annual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

~~26.~~**AQ-27.** The maximum projected annual toxic air contaminant emissions (per condition 30~~29~~) from the Gas Turbines and HRSGs combined (S-1, S-2, S-3, and S-4) shall not exceed the following limits:

formaldehyde	3,796 pounds per year
benzene	480 pounds of per year
Specified polycyclic aromatic hydrocarbons (PAHs)	22.8 pounds of per year

unless the following requirement is satisfied:

The owner/operator shall perform a health risk assessment using the emission rates determined by source test and the most current Bay Area Air Quality Management District approved procedures and unit risk factors in effect at the time of the analysis. This risk analysis shall be submitted to the District and the CEC CPM within 60 days of the source test date. The owner/operator may request that the District and the CEC CPM revise the carcinogenic compound emission limits specified above. If the owner/operator demonstrates to the satisfaction of the APCO that these revised emission limits will result in a cancer risk of not more than 1.0 in one million, the District and the CEC CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. (TRMP)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

~~27.~~**AQ-28.** The owner/operator shall demonstrate compliance with conditions 14 through 17, 20(a) through 20(d), 21, 22, 25~~4~~(a), 25~~4~~(b), 26~~5~~(a), and 26~~5~~(b) by using properly operated and maintained continuous monitors (during all hours of operation including equipment Start-up and Shutdown and Combustor Tuning periods) for all of the following parameters:

(a) Firing Hours and Fuel Flow Rates for each of the following sources: S-1 & S-2 combined and S-3 & S-4 combined.
(b) Oxygen (O_2) Concentrations, Nitrogen Oxides (NO_x) Concentrations, and Carbon Monoxide (CO) Concentrations at each of the following exhaust points: P-1 and P-2.
(c) Ammonia injection rate at A-1 and A-2 SCR Systems
(d) Steam injection rate at S-1 & S-3 Gas Turbine Combustors

The owner/operator shall record all of the above parameters every 15 minutes (excluding normal calibration periods) and shall summarize all of the above parameters for each clock hour. For each calendar day, the owner/operator shall calculate and record the total firing hours, the average hourly fuel flow rates, and pollutant emission concentrations.

The owner/operator shall use the parameters measured above and District-approved calculation methods to calculate the following parameters:

(e) Heat Input Rate for each of the following sources: S-1 & S-2 combined and S-3 & S-4 combined.
(f) Corrected NO_x concentrations, NO_x mass emissions (as NO_2), corrected CO concentrations, and CO mass emissions at each of the following exhaust points: P-1 and P- 2.

For each source, source grouping, or exhaust point, the owner/operator shall record the parameters specified in conditions 2~~8~~7(e) and 2~~8~~7(f) at least once every 15 minutes (excluding normal calibration periods). As specified below, the owner/operator shall calculate and record the following data:

(g) total Heat Input Rate for every clock hour and the average hourly Heat Input Rate for every rolling 3-hour period.
(h) on an hourly basis, the cumulative total Heat Input Rate for each calendar day for the following: each Gas Turbine and associated HRSG combined and all four sources (S-1, S- 2, S-3, and S-4) combined.
(i) the average NO_x mass emissions (as NO_2), CO mass emissions, and corrected NO_x and CO emission concentrations for every clock hour and for every rolling 3-hour period.
(j) on an hourly basis, the cumulative total NO_x mass emissions (as NO_2) and the cumulative total CO mass emissions, for each calendar day for the following: each Gas Turbine and associated HRSG combined, and all four sources (S-1, S-2, S-3, and S-4) combined.
(k) For each calendar day, the average hourly Heat Input Rates, Corrected NO_x emission concentrations, NO_x mass emissions (as NO_2), corrected CO emission concentrations, and CO mass emissions for each Gas Turbine and associated HRSG combined.
(l) on a daily basis, the cumulative total NO_x mass emissions (as NO_2) and cumulative total CO mass emissions, for the previous consecutive twelve month period for all four sources (S-1, S-2, S-3, and S-4) combined.

(1-520.1, 9-9-501, BACT, Offsets, NSPS, PSD, Cumulative Increase)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

~~28.~~AQ-29. To demonstrate compliance with conditions 20(f), 20(g), 20(h), 21, 2~~5~~4(c) through 2~~5~~4(e), and 2~~6~~5(c) through 2~~6~~5(e), the owner/operator shall calculate and record on a daily basis, the Precursor Organic Compound (POC) mass emissions, Fine Particulate Matter (PM_{10}) mass emissions (including condensable particulate matter), and Sulfur Dioxide (SO_2) mass emissions from each power train. The owner/operator shall use the actual Heat Input Rates calculated pursuant to condition 2~~8~~7, actual Gas Turbine Start-up Times, actual Gas Turbine Shutdown Times, actual Gas Turbine Combustor Tuning Times, and CEC and District-approved emission factors to calculate these emissions. The calculated emissions shall be presented as follows:

(a) For each calendar day, POC, PM_{10}, and SO_2 emissions shall be summarized for: each power train (Gas Turbine and its respective HRSG combined) and all four sources (S-1, S- 2, S-3, and S-4) combined.
(b) on a daily basis, the cumulative total POC, PM_{10}, and SO_2 mass emissions, for each year for all four sources (S-1, S-2, S-3, and S-4) combined.

(Offsets, PSD, Cumulative Increase)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

~~29.~~**AQ-30.** To demonstrate compliance with Condition 27~~6~~, the owner/operator shall calculate and record on an annual basis the maximum projected annual emissions of: Formaldehyde, Benzene, and Specified PAH's. Maximum projected annual emissions shall be calculated using the maximum Heat Input Rate of 35,274,060 MM BTU/year and the highest emission factor (pounds of pollutant per MM BTU of Heat Input) determined by any source test of the S-1 & S-3 Gas Turbines and/or S-2 & S-4 Heat Recovery Steam Generators. (TRMP)

Verification: As part of the annual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-31. To demonstrate compliance with Condition 23, the owner/operator shall record the start time, end time and duration of each Gas Turbine Cold Startup and each Combustor Tuning Period. On an annual basis, the owner/operator shall report the total number of hours during which the Gas Turbines operated in cold startup or combustor tuning mode during the year.

Verification: During site inspection, the owner/operator shall make all records and reports available to the District, California Air Resources Board, and CPM.

~~30.~~**AQ-32.** Within ~~60~~ 90 days of start-up of the MEC, the owner/operator shall conduct a District-approved source test on exhaust point P-1 or P-2 to ~~determine the corrected ammonia (NH_3) emission concentration~~establish the terms to be used in the calculation to determine compliance with condition 20(e). ~~The source test shall determine the correlation between the heat input rates of the gas turbine and associated HRSG, A-1 or A-2 SCR System ammonia injection rate, and the corresponding NH_3 emission concentration at emission point P-1 or P-2.~~ The source test shall be conducted over the expected operating range of the turbine and HRSG (including, but not limited to, minimum and 100% load) to establish the ~~range of ammonia injection rates necessary to achieve NO_x emission reductions while maintaining~~correction factors to be used to calculate ammonia slip levels. Continuing compliance with condition 20(e) shall be demonstrated through calculations of corrected ammonia concentrations based upon the ~~source test correlation and continuous records of ammonia injection rate~~District-approved procedure. (TRMP)

Verification: At least ninety (90) days before start-up, the owner/operator shall provide a copy of the source test protocols. Approval of the source test protocols and the source test reports shall be deemed as verification for this Condition. The owner/operator shall notify the District and the CEC CPM within seven (7) working days before the execution of the source tests required in this Condition. Source test results shall be submitted to the District and to the CEC CPM within ~~thirty~~ sixty (6~~3~~0) days of the date of the tests.

AQ-33. Within ~~sixty (60~~ 90~~)~~ days of start-up of the MEC and on an annual basis thereafter, the owner/operator shall conduct a District-approved source test on exhaust points P-1 and P-2 while each Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum load (including steam injection power augmentation mode) to determine compliance with Conditions 20(a), (b), (c), (d), (f), (g), and (h), while each Gas Turbine and associated Heat Recovery Steam Generator are operating at minimum load to determine compliance with Conditions 20(c) and (d), and to verify the accuracy of the continuous emission monitors required in condition ~~29~~28. The owner/operator shall test for (as a minimum): water content, stack gas flow rate,

oxygen concentration, precursor organic compound concentration and mass emissions, nitrogen oxide concentration and mass emissions (as NO_2), carbon monoxide concentration and mass emissions, sulfur dioxide concentration and mass emissions, methane, ethane, and particulate matter (PM_{10}) emissions including condensable particulate matter. (BACT, offsets)

Verification: At least ninety (90) days before start-up, the owner/operator shall provide a copy of the source test protocols. Approval of the source test protocols, as required in Condition ~~58~~32, and the source test reports shall be deemed as verification for this Condition. The owner/operator shall notify the District and the CEC CPM within seven (7) working days before the execution of the source tests required in this Condition. Source test results shall be submitted to the District and to the CEC CPM within ~~thirty~~ sixty (6~~3~~0) days of the date of the tests.

~~32.~~AQ-34. The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section and the CEC CPM prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emission monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section and the CEC CPM in writing of the source test protocols and projected test dates at least 7 days prior to the testing date(s). As indicated above, the Owner/Operator shall measure the contribution of condensable PM (back half) to the total PM_{10} emissions. However, the Owner/Operator may propose alternative measuring techniques to measure condensable PM such as the use of a dilution tunnel or other appropriate method used to capture semi-volatile organic compounds. Source test results shall be submitted to the District and the CEC CPM within 60 days of conducting the tests. (BACT)

Verification: At least ninety (90) days before start-up, the owner/operator shall provide a copy of the source test protocols. Approval of the source test protocols and the source test reports will be deemed as verification of this Condition.

~~33.~~AQ-35. Within ~~sixty (90)~~60 days of start-up of the MEC and on a~~n~~ biennial basis (once every two years) thereafter, the owner/operator shall conduct a District-approved source test on exhaust point P-1 or P-2 while the Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum allowable operating rates to demonstrate compliance with Condition 2~~7~~6. The gas turbine shall also be tested at minimum load. If three consecutive biennial source tests demonstrate that the annual emission rates calculated pursuant to condition 30~~29~~ for any of the compounds listed below are less than the BAAQMD Toxic Risk Management Policy trigger levels shown, then the owner/operator may discontinue future testing for that pollutant:

Benzene	≤ 26.8 pounds/year
Formaldehyde	< 132 pounds/year
Specified PAH's	≤ 0.18 pounds/year

(TRMP)

Verification: The owner/operator shall notify the District and the CEC CPM within seven (7) working days before the execution of the source tests required in this Condition. Source test results shall be submitted to the District and to the CEC CPM within ~~thirty~~ sixty (6~~3~~0) days of the date of the tests.

~~34.~~AQ-36. The owner/operator of the MEC shall submit all reports (including, but not limited to monthly CEM reports, monitor breakdown reports, emission excess reports, equipment breakdown reports, etc.) as required by District Rules or Regulations and in accordance with all procedures and time limits specified in the Rule, Regulation, Manual

of Procedures, or Enforcement Division Policies & Procedures Manual. Data from any source test required by this permit shall be submitted to the District within 60~~30~~ days of the testing date, unless otherwise indicated. (Regulation 2-6-502)

Verification: At least ninety (90) days before start-up, the owner/operator shall provide a copy of the test protocols. Submittal of the reports to the CEC CPM constitutes verification of compliance with this Condition. All reports shall be subitted to the CEC CPM ~~within~~ when they are due according to District Rules and Regulations.

~~35.~~AQ-37. The owner/operator of the MEC shall maintain all records and reports on site for a minimum of 5 years. These records shall include but are not limited to: continuous monitoring records (firing hours, fuel flows, emission rates, monitor excesses, breakdowns, etc.), source test and analytical records, natural gas sulfur content analysis results, emission calculation records, records of plant upsets and related incidents. The owner/operator shall make all records and reports available to District and the CEC CPM staff upon request. (Regulation 2-6-501)

Verification: During site inspection, the owner/operator shall make all records and reports available to the District, California Air Resources Board, and CPM.

~~36.~~AQ-38. The owner/operator of the MEC shall notify the District and the CEC CPM of any violations of these permit conditions. Notification shall be submitted in a timely manner, in accordance with all applicable District Rules, Regulations, and the Manual of Procedures. Notwithstanding the notification and reporting requirements given in any District Rule, Regulation, or the Manual of Procedures, the owner/operator shall submit written notification (facsimile is acceptable) to the Enforcement Division within 96 hours of the violation of any permit condition. (Regulation 2-1- 403)

Verification: Submittal of these notifications as required by this Condition is the verification of these permit conditions. In addition, as part of the Air Quality Reports, the owner/operator shall include information on the dates when these violations occurred and when the owner/operator notified the District and the CEC CPM.

~~37.~~AQ-39. The stack height of emission points P-1 and P-2 shall each be at least 145 feet above grade level at the stack base. (PSD, TRMP)

Verification: At least forty-five ($%) days prior to the release to the manufacturer of the emission stack's "approved for construction" drawings, the Owner/Operator shall submit the drawings to the CEC CPM for review and approval.

~~38.~~AQ-40. The Owner/Operator of MEC shall provide adequate stack sampling ports and platforms to enable the performance of source testing. The location and configuration of the stack sampling ports shall be subject to BAAQMD review and approval. (Regulation 1-501)

Verification: At least one hundred and twenty (120) days before initial operation, the Owner/Operator shall submit to the BAAQMD and the CEC CPM a plan for the installation of stack sampling ports and platforms. Within sixty (60) days of receipt of the plan, the BAAQMD will advise the Owner/Operator and the CEC CPM of the acceptability of the plan; otherwise the plan shall be deemed approved.

~~39.~~AQ-41. Within 180 days of the issuance of the Authority to Construct for the MEC, the Owner/Operator shall contact the BAAQMD Technical Services Division regarding requirements for the continuous emission monitors, sampling ports, platforms, and source tests required by conditions 2~~8~~7, 3~~2~~0, 3~~3~~1, 3~~5~~3, and 4~~9~~7. All source testing and monitoring shall be conducted in accordance with the BAAQMD Manual of Procedures. (Regulation 1-501)

Verification: The owner/operator shall notify the CEC CPM at least seven (7) working days before these contacts are made.

~~40.~~AQ-42. Prior to the issuance of the BAAQMD Authority to Construct for the Metcalf Energy Center, the Owner/Operator shall demonstrate that valid emission reduction credits in the amount of ~~212.75~~172.5 tons/year of Nitrogen Oxides and 28 tons/year of Precursor Organic Compounds or equivalent (as defined by District Regulations 2-2-302.1 and 2-2-302.2) are under their control through enforceable contracts, option to purchase agreements, or equivalent binding legal documents. (Offsets)

Verification: No more than thirty (30) days after the issuance of an Authority to Construct, the Owner/Operator shall provide a copy of the ATC to the CEC CPM for review.

~~41.~~AQ-43. Prior to the start of construction of the Metcalf Energy Center, the Owner/Operator shall provide to the District valid emission reduction credit banking certificates in the amount of ~~212.75~~172.5 tons/year of Nitrogen Oxides and 28 tons/year of Precursor Organic Compounds or equivalent as defined by District Regulations 2-2-302.1 and 2-2-302.2. (Offsets, CEC)

Verification: At least thirty (30) days prior to the start of construction, the owner/operator must submit a copy of the required offset or emission reduction credit (ERCs) certifications to the CEC CPM.

~~42.~~AQ-44. Pursuant to BAAQMD Regulation 2, Rule 6, section 404.1, the owner/operator of the MEC shall submit an application to the BAAQMD for a major facility review permit within 12 months of the issuance of the PSD permit for the MEC. (Regulation 2-6-404.1)

Verification: The owner/operator shall notify the CEC CPM of the submittal of this application. In addition, the owner/operator shall submit to the CPM a copy of the Federal (Title V) Operating Permit within thirty (30) days after it is issued by the District.

~~43.~~AQ-45. Pursuant to 40 CFR Part 72.30(b)(2)(ii) of the Federal Acid Rain Program, the owner/operator of the Metcalf Energy Center shall submit an application for a Title IV operating permit to the BAAQMD. Operation of any of the gas turbines (S-1 & S-3) or HRSGs (S-2 & S-4) without a Title IV operating permit may not occur sooner than 24 months after the application is received by the BAAQMD. (Regulation 2, Rule 7)

Verification: At least twenty-four (24) months before the initial operation, the owner/operator shall submit to the CEC CPM a copy of the application for the Title IV operating permit.

~~44.~~AQ-46. The Metcalf Energy Center shall comply with the continuous emission monitoring requirements of 40 CFR Part 75. (Regulation 2, Rule 7)

Verification: At least sixty (60) days before the initial operation, the owner/operator shall submit to the CEC CPM a plan on how the measurements and recordings required by this Condition will be performed. Submittal of the reports will also provide verification of compliance with this Condition.

~~45.~~AQ-47. The owner/operator shall take monthly samples of the natural gas combusted at the MEC. The samples shall be analyzed for sulfur content using District-approved laboratory methods. The sulfur content test results shall be retained on site for a minimum of five years from the test date and shall be utilized to satisfy the requirements of 40 CFR Part 60, subpart GG. (cumulative increase)

Verification: The owner/operator shall maintain on site the records of all the guarantees received from its natural gas suppliers indicating that the fuel delivered to the MEC complies with ~~the~~ 40 CFR 60, Subpart GG. These records shall be made available to the District or the CEC CPM upon request during on-site compliance inspections.

~~46.~~AQ-48. The cooling towers shall be properly installed and maintained to minimize drift losses. The cooling towers shall be equipped with high-efficiency mist eliminators with a maximum guaranteed drift rate of 0.0005%. The maximum total dissolved solids (TDS) measured at the base of the cooling towers or at the point of return to the wastewater facility shall not be higher than 5,438 ppmw (mg/l). The owner/operator shall sample the water at least once per day. (PSD)

Verification: At least thirty (30) days prior to installation, the owner/operator shall submit to the CEC CPM a performance guarantee letter from the cooling tower manufacturer. As part of the compliance record, the owner/operator shall keep records on-site on the ~~TSC~~ TDS content of water in the cooling tower.

~~47.~~AQ-49. The owner/operator shall perform a visual inspection of the cooling tower drift eliminators at least once per calendar year, and repair or replace any drift eliminator components which are broken or missing. Prior to the initial operation of the Metcalf Energy Center, the owner/operator shall have the cooling tower vendor's field representative inspect the cooling tower drift eliminators and certify that the installation was performed in a satisfactory manner. Within 90~~60~~ days of the initial operation of the cooling tower, the owner/operator shall perform an initial performance source test to determine the PM_{10} emission rate from the cooling tower to verify compliance with the vendor-guaranteed drift rate specified in condition 48~~6~~. The CPM may, in years 5 and 15 of cooling tower operation, require the owner/operator to perform source tests to verify continued compliance with the vendor-guaranteed drift rate specified in condition 48~~6~~. (PSD)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

For the purposes of the following Conditions, the following definitions apply:

(1) ACTIVE OPERATIONS shall mean any activity capable of generating fugitive dust including, but not limited to, earth-moving activities, construction/demolition activities, or heavy- and light-duty vehicular movement.

(2) CHEMICAL STABILIZERS mean any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation; and should meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(3) CONSTRUCTION / DEMOLITION ACTIVITIES are any on-site mechanical activities preparatory to or related to the building, alteration, rehabilitation, demolition or improvement of property including, but not limited to, the following activities; grading, excavation, loading, crushing, cutting, planing, shaping, or ground breaking.

(4) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust.

(5) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(6) EARTH-MOVING ACTIVITIES shall include, but not be limited to, grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, or soil mulching.

(7) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of man.

(8) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of ten consecutive days.

(9) STABILIZED SURFACE means:
(A) any disturbed surface area or open storage pile which is resistant to wind-driven fugitive dust;
(B) any unpaved road surface in which any fugitive dust plume emanating from vehicular traffic does not exceed 20 percent opacity.

(10) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

AQ-50. ~~**AQ-48**~~–The project owner shall implement a CEC CPM approved fugitive Dust Control Plan during the construction phase of the project.

The plan shall include the following:

1. A description of each of the active operation(s) which may result in the generation of fugitive dust;

2. An identification of all sources of fugitive dust (e.g., earth-moving, storage piles, vehicular traffic, etc.);

3. A description of the Best Available Fugitive Dust Control Measures (see Table 1 attached) to be applied to each of the sources of dust emissions identified above (including those required in AQ-~~50~~ 52 below). The description must be sufficiently detailed to demonstrate that the applicable best available control measure(s) will be utilized and/or installed during all periods of active operations;

4. In the event that there are special technical (e.g., non-economic) circumstances, including safety, which prevent the use of at least one of the required control measures for any of the sources identified, a justification statement must be provided to explain the reason(s) why the required control measures cannot be implemented.

Verification: Not later than sixty (60) days prior to the commencement of construction, the project owner shall submit the plan to the CEC CPM for review and approval. The project owner shall maintain daily records to document the specific actions taken pursuant to the plan. A summary of the monthly activities shall be submitted to the CPM via the Monthly Compliance Report.

AQ-51. ~~AQ-49~~ During the construction phase of the project, the project owner shall:

1. Prevent or remove within one hour the track-out of bulk material onto public paved roadways as a result of their operations, or take at least one of the actions listed in Table 2 (attached) to prevent the track-out of bulk material onto public paved roadways as a result of their operations and remove such material at anytime track-out extends for a cumulative distance of greater than 50 feet on to any paved public road during active operations;

2. Install and use a track-out control device to prevent the track-out of bulk material from areas containing soils requiring corrective action to other areas within the project construction site and lay-down area;

3. Minimize fugitive particulate emissions from vehicular traffic on paved roads and paved parking lots on the construction site by vacuum mechanical sweeping or water flushing of the road surface to remove buildup of loose material. The project owner shall inspect on a daily basis the conditions of the paved roads and parking lots to determine the need for mechanical sweeping or water flushing.

Verification: The project owner shall maintain a daily log during the construction phase of the project indicating: 1) the manner in which compliance with AQ-~~49~~ 51 is achieved; and 2) the date and time when the inspection of paved roads and parking lots occurs and the date and time(s) when the cleaning operation occurs. The logs shall be made available to the CEC CPM upon request.

AQ-52. ~~AQ-50~~ At any time when fugitive dust from Metcalf Energy Center project construction is visible in the atmosphere beyond the property line, the project owner will identify the source of the fugitive dust and implement one or more of the appropriate control measures specified in Table 3 (attached)

Verification: The project owner will maintain a daily log recording the dates and times that measures in Table 3 (attached) have been implemented and make them available to the CEC CPM upon request.

AQ-53. ~~AQ-51~~ To fully mitigate PM_{10} emissions and prior to the start of construction, the Metcalf Energy Center owner/operator must surrender to the Bay Area Air Quality Management District valid ERC certificates for PM_{10} for the amount of 29.21 tons per year and for VOC for the amount of 124.2 tons per year from the following sources:

• Folgers Coffee in South San Francisco (Certificate # 413) for the amount of 7.7 tons/year of PM_{10} emissions;
• Frito Lay in San Jose (Certificate # 426) for the amount of 7.64 tons/year of PM_{10} emissions;
• Glorietta Food in San Jose (Certificate # 19) for the amount of 1.54 tons/year of PM_{10} emissions;
• Raisch Products in Mountain View (Certificate # 507) for the amount of 12.33 tons/year of PM_{10} emissions;
• Quebecor Facility in San Jose (Certificate # 625) for the amount of 124.2 tons/year of VOC emissions.

This portion of required PM_{10} ERCs and VOC ERCs and offsets are to be provided in addition to the requirements of Condition 43~~4~~.

Verification: At least thirty (30) days prior to the start of construction, the project owner must submit a copy of the required ERC certificates to the CPM and the District.

AQ-54. ~~AQ-52~~ The project owner shall mitigate, to the extent practical, construction related emission impacts from off-road, diesel-fired construction equipment. Available measures which may be used to mitigate construction impacts include the following:

• Catalyzed Diesel Particulate Filters (CDPF);
• Ultra-Low-Sulfur Diesel fuel, with a sulfur content of 15 ppm or less (ULSD);
• Diesel engines certified to EPA and CARB 1996 or newer off-road equipment emission standards.

Additionally, the project owner shall restrict idle time, to the extent practical, to no more than 10 minutes.

The use of each mitigation measure is to be determined in advance by a Construction Mitigation Manager (CMM), who will be available at the project site(s). The CMM must be approved by the CPM prior to the submission of any reports.

The CMM shall submit the following reports to the CPM for approval:

• Construction Mitigation Plan
• Reports of Change and Mitigation Implementation
• Reports of Emergency Termination of Mitigation, as necessary

Diesel Construction Equipment Mitigation Plan:

The Construction Mitigation Plan shall be submitted to the CPM for approval prior to rough grading on the project site, and must include the following:

1. A list of all diesel fueled, off-road, stationary or portable constructionrelated equipment to be used either on the project construction site or the construction sites of the related linear facilities. Equipment used less than a total of 10 consecutive days need not be included in this list.
2. Each piece of construction equipment listed under item (1) must demonstrate compliance with the following mitigation requirements:

Engine Size (BHP)	1996 CARB or EPA Certified Engine	Required Mitigation
< or = 100	Yes or No	ULSD
>100	Yes	ULSD
>100	No	ULSD and CDPF, if suitable as determined by the CMM

3. If compliance can not be demonstrated as specified under item (2), then the project owner may appeal for relief to the CPM. However, the owner must demonstrate that they have made a good faith effort to comply as specified under item (2).

Report of Change and Mitigation Implementation

Following the initiation of construction activities, and if changes to mitigation measures are necessary, the CMM shall submit a Report of Change and Mitigation Implementation to the CPM for approval. This report must contain at a minimum the cause of any deviation from the Construction Mitigation Plan, and verification of any Construction Mitigation Plan measures that were implemented. The following is acceptable proof of compliance, other methods of proof of compliance must be approved by the CPM.

1. EPA or CARB 1996 off-road equipment emission standards:
   a) A copy of the certificate from EPA or CARB.
2. Purchase and use of ultra-low-sulfur fuel (15 ppm or less).
   a) Receipt or other documentation indicating type and amount of fuel purchased, from whom, where delivered and on what date; and
   b) A copy of the text included in the contract agreement with all contractors and sub-contractors for use of the ultra-low-sulfur fuel in diesel burning construction equipment as identified in the Construction Mitigation Plan.
3. Installation of CDPF:
   a) The suitability of the use of CDPFs is to be determined by a qualified mechanic or engineer who must submit a report to the CPM for approval.
   b) Installation is to be verified by a qualified mechanic or engineer.
4. Construction equipment engine idle time:
   a) A copy of the text included in the contract agreement with all contractors and sub-contractors to keep engine idle time to 10 minutes or less to the extent practical.

Report of Emergency Termination of Mitigation

If a specific mitigation measure is determined to be detrimental to a piece of construction equipment or is determined to be causing significant delays in the construction schedule of the project or the associated linear facilities, the mitigation measure may be terminated immediately. However, notification containing an explanation for the cause of the termination must be sent to the CPM for approval. All such causes are restricted to one of the following justifications and must be identified in any Report of Emergency Termination of Mitigation.

1. The measure is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or power output due to an excessive increase in back pressure.
2. The measure is causing or is reasonably expected to cause significant engine damage.
3. The measure is causing or is reasonably expected to cause a significant risk to nearby workers or the public.
4. Any other seriously detrimental cause which has approval by the CPM prior to the change being implemented.

Verification: The project owner will submit to the CPM for approval the qualifications of the CMM at least 45 days prior to the due date for the Diesel Construction Equipment Mitigation Plan. The project owner will submit the Diesel Construction Equipment

Mitigation Plan to the CPM for approval 30 calendar days prior to rough grading on the project site or start of construction on any associated linear facilities. The project owner will submit the Report of Change and Mitigation Implementation to the CPM for approval no later than 10 working days following the use of the specific construction equipment on either the project site or the associated linear facilities. The project owner will submit a Report of Emergency Termination of Mitigation to the CPM for approval, as required, no later than 10 working days following the termination of the identified mitigation measure. The CPM will monitor the approval of all reports submitted by the project owner in consultation with CARB, limiting the review time for any one report to no more than 20 working days.

AQ-55. ~~**AQ-53**~~ The heat input to the fire pump diesel engine resulting from maintenance and testing activities shall not exceed 211 MM BTU totaled over any consecutive twelve month period. (TRMP)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-56. ~~**AQ-54**~~ The total hours of operation of the emergency generator shall not exceed 200 hours per calendar year, plus an additional 100 hours per calendar year for the purposes of maintenance and testing. (Regulation 2-1-114.2.3.1)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-57. ~~**AQ-55**~~ The project owner shall install an oxidation catalyst to control VOC emissions.

Verification: As part of the final design plans, specifications, and drawings, the project owner shall submit to the District and the CPM for review and approval the final selection and design details of the combustion equipment, including all emission control systems.